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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,741	12/29/2005	Rudiger Kolb	502901-220PUS	7798

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COHEN, PONTANI, LIEBERMAN & PAVANE
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NEW YORK, NY 10176

EXAMINER

SHELL, JOSEPH O

ART UNIT	PAPER NUMBER
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2114

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/562,741	Applicant(s) KOLB ET AL.	
	Examiner Joseph Schell	Art Unit 2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Claims 10-19 have been examined.

Claims 10-19 have been rejected.

Claim Objections

1. Claim 13 line 1 states the limitation "the program". This limitation lacks antecedent basis within the claim.
2. Claim 13 line 7 states "returning... a response which is dependent on the input data is returned.." This use of "returned" is redundant.
3. Claim 16 line 2 should read "setting or changing, within the other of the microcomputers, a respective flag." Alternatively, "for", "regarding" or "with respect to" or another preposition may be used instead of "within".
4. Claim 18 lines 1-2 should include commas to read "counting errors, using an error counter in the one of the microcomputers, which have been detected..."

Allowable Subject Matter

5. Claims 15 and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and pending the satisfactory resolution of the 112 and 101 rejections cited below.

Within claims 15 and 17 the examiner deems the novel limitation to be, within the entirety of each claim, that the second processor identifies a falsification it has

Art Unit: 2114

intentionally introduced as an error in its response to the first processor and the first processor that performs comparing of the request and response.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 15 and 17-19 are rejected under 35 U.S.C. 112 first paragraph as not enabled by the specification to a degree that would allow a person skilled in the art to make and use the claimed invention. Specifically, line 5 of Claims 15 and 17 state “expecting, by the one of the microcomputers, and checking for the falsification.” Checking for a falsification is clear enough, but it is unclear from the specification how the microcomputer operates to “expect” the falsification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 14 is rejected under 35 U.S.C. 112 second paragraph as being indefinite. Line two of the claim states “the actual function of the other of the microcomputers.” Not only does this limitation lack antecedent basis, but it also implies that the program of parent claim 13 is capable of performing a pseudo-function (other than the “actual” function). Examiner is interpreting this claim as limiting the other of the microcomputers

to executing a program that is a copy of another program used by the one of the microcomputers.

Claim Rejections - 35 USC § 101

8. Claims 13-15 and 18 are rejected under 35 U.S.C. 101 for being a method claim without providing a useful, concrete and tangible result (See MPEP 2106). Claim 13 performs a comparison but does not include a step of actually identifying errors or another clearly useful function and the cited dependent claims do not remedy this lack.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai ('196) in view of Wikipedia's Global Positioning System (herein Wikipedia's GPS).

10. As per claim 10, Tsai ('196) discloses a method for monitoring program execution in a microcomputer, comprising the steps of:

executing, by the microcomputer, a program including processing input data and generating first output data (column 9 lines 38-41);

executing a copy of the program with the input data intended for the program and generating a second output data, the copy being stored in a different address area than the program in the microcomputer (see abstract, there are multiple copies of a target program and user-specified variables are compared between the copies); and

comparing the second output data from the copy with the first output data from the program and generating an error message if the second output data from the copy do not match the first output data from the program (see abstract, on a mismatch a new copy of a program is restarted from a previous checkpoint).

Tsai ('196) does not expressly disclose the system for use in a sensor circuit for motor vehicles.

Wikipedia's GPS teaches the operation and use of GPS.

At the time of invention it would have been obvious to a person of ordinary skill in the art to modify the program monitoring system disclosed by Tsai ('196) such that it performs testing on a GPS system. This modification would have been obvious because GPS allows for the benefits of determining one's precise location and the current time (Wikipedia's GPS, first paragraph) while the method used by Tsai ('196) ensures data integrity without need of modifying source code (Tsai ('196) column 2 lines 32-35).

11. As per claim 11, Tsai ('196) in view of Wikipedia's GPS discloses the method of claim 10, further comprising the step of further executing the copy for processing prescribed test data and generating third output data from the prescribed test data, comparing the third output data generated from the prescribed test data with comparative data stored in a memory, and generating an error message if the third output data generated from the prescribed test data do not match the comparative data (column 8 lines 43-45, at each breakpoint each backend reports preselected variable values to the front end for comparison. Considering that there are three copies of the target program, one per backend machine, upon the second breakpoint and variable comparison, the second copy of the target program generates a third output data from the second copy of the program).

12. As per claim 12, Tsai ('196) in view of Wikipedia's GPS discloses the method of claim 10, further comprising the steps of one of setting or changing a respective flag following the execution of program portions of the program, and generating an error message if not all the flags have been set or changed following the execution of the program (column 10 lines 58-61, each set breakpoint is a flag, and when the breakpoint is not reached by the target program a error is declared).

13. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corrie (US Patent Application Publication 2003/0233635) in view of Wikipedia's GPS.

14. As per claim 13 Corrie ('635) discloses a method for monitoring the program execution in at least two interconnected microcomputers (paragraph 11, master and slave processors), comprising the steps of:

generating, by one of the microcomputers, a request which is transmitted to the other microcomputer (paragraph 11);

using, by the other of the microcomputers, prescribed input data to prompt the execution of a program in response to receipt of the request (paragraph 11);

returning, by the other of the microcomputers, a response which is dependent on the input data is returned to the one of the microcomputers (paragraph 11, the unit for receiving and unit for comparing are associated with the master processor); and

comparing, in the one of the microcomputers, the request and the response with one another (paragraph 11, the unit for receiving and unit for comparing are associated with the master processor).

Corrie ('635) does not expressly disclose the method wherein the two interconnected microcomputers are in a sensor circuit for motor vehicles.

Wikipedia's GPS teaches the operation and use of GPS.

At the time of invention it would have been obvious to a person of ordinary skill in the art to modify the program monitoring system disclosed by Corrie ('635) such that the system is used in a GPS system in a vehicle. This modification would have been

obvious because GPS allows for the benefits of determining one's precise location and the current time (Wikipedia's GPS, first paragraph) and the system disclosed by Corrie ('635) allows for testing of software functions (paragraph 11).

15. As per claim 14, Corrie ('635) in view of Wikipedia's GPS discloses the method of claim 13, wherein the program is a copy of another program which performs the actual function of the other of the microcomputers (as shown in Corrie ('635) Figure 1, the master and slave processors are remotely located. Also see Corrie ('635) paragraph 39).

16. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corrie ('635) in view of Wikipedia's GPS and in further view of Alderson (US Patent 5,347,649).

Corrie ('635) in view of Wikipedia's GPS discloses the method of claim 13. Corrie ('635) in view of Wikipedia's GPS does not disclose the method of claim 13, further comprising the steps of one of setting or changing, the other of the microcomputers, a respective flag in a flag register following the execution of program portions of the program, and generating an error message if not all the flags have been set or changed following the execution of the program.

Art Unit: 2114

Alderson ('649) teaches a system that traces program functions and consolidates the trace information from each function into a single block (see abstract and figure 1).

At the time of invention it would have been obvious to a person of ordinary skill in the art to modify the program monitoring system disclosed by Corrie ('635) in view of Wikipedia's GPS such that program tracing is performed and the traced data consolidated into a single block. This modification would have been obvious because tracing allows a programmer to closely follow and analyze the state of a system around the time of a fault (Alderson ('694) column 1 lines 12-15) while the consolidation allows for multiple functions to be ordered according to a global event timeline (Alderson ('694) column 2 lines 13-16).

Wikipedia's Memory Hierarchy provides an overview of different kinds of memory in terms of their relative speeds and their implementations in modern CPUs.

At the time of invention it would have been further obvious to a person of ordinary skill in the art to modify the program monitoring system disclosed by Corrie ('635) in view of Wikipedia's GPS and Alderson ('649) such that the traced data is stored in a register. This modification would have been obvious because CPU registers are the fastest form of memory (see Memory Hierarchy).

Art Unit: 2114

Finally, the examiner takes official notice that it would be obvious to modify the system disclosed by Corrie ('635) in view of Wikipedia's GPS, Alderson ('649) and Wikipedia's Memory Hierarchy such that a error message is generated if tracing is not completed. An error message feature is well known in the art and especially appropriate in view of the "trace complete" message provided by Alderson ('649) (column 5 lines 29-32). See also the attached reference, Wikipedia's Error Message.

Conclusion

The prior art made of record on accompanying PTO 892 form and not relied upon is considered pertinent to applicant's disclosure. Specifically, Watari ('081) teaches a system where a secondary CPU mirrors a first CPU error for processing error detection and fault insertion for a vehicle sensor system and Stewart ('780) teaches a system where a slave processor mirrors the operation of a master processor and fault insertion is performed by altering input data.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Schell whose telephone number is (571) 272-8186. The examiner can normally be reached on Monday through Friday 9AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS



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